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THOMAS WALTER TYPIFICATION PROJECT, VII: OBSERVATIONS ON THE GENUS *COLLINSONIA* (LABIATAE) AND A NEOTYPE FOR *C. SEROTINA* WALTER

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ABSTRACT

Thomas Walter published his *Flora Caroliniana* in 1788. Because of the early date of this flora, many of its species were new to science, and the names given them by Walter remain of importance in the botany of the American Southeast. Walter kept no herbarium, and uncertainty has followed the application of many of his names. Previous numbers of this series have addressed many of these untypified species. Here, attention is given to the species of *Collinsonia* (Labiatae) and particularly to a mint described by Walter, *C. serotina*, whose name has often been disregarded as ambiguous, now made certain by selection of a replacement for the missing type, a neotype. This typification displaces the long-familiar *C. anisata* Sims.

Thomas Walter (1740-1789) was the owner of a rice plantation on the Santee River, Berkeley County, South Carolina. In 1788 he published a small book, *Flora Caroliniana*, a compilation of the plants that he knew within a 50-mile radius of his home. But he also included other species that are unknown on the Carolina coastal plain. In the fall of 1786 he was visited by a Scot, John Fraser, who came to the Carolinas in search of plants of value for English horticulture. Fraser collected widely during 1787, venturing far into Georgia in the company of Andre Michaux, the French botanical explorer, and into the western Carolina mountains. It is believed Fraser brought to Walter plants he would otherwise not have known and included by him in his *Flora*.

But Walter kept no herbarium (Ward 2007a), and a significant number of the names he published are uncertain as to their modern application. An effort, the Thomas Walter Typification Project (Ward 2006, 2007b, 2007c, 2007d, 2008a, 2008b), has published neotypes, lectotypes, and epitypes for many of these questionable names. By the selection of type specimens to represent these names, they become fixed in their meaning, bringing stability to the nomenclature of this portion of the Southeastern flora.

One small genus addressed by Walter contained problems, both of nomenclature and taxonomy, too complex to be summarized in the concise format employed by prior numbers of the TWTP. Walter (1788: 65) named and described two species of *Collinsonia* — *C. praecox* and *C. serotina*. These are mints (Labiatae) of a genus established by Linnaeus (1753: 28). Walter's first species, *C. praecox*, is often treated as a synonym of the type species of the genus, *C. canadensis* L., and is not of issue. His second, *C. serotina*, has been problematic and is untypified. The genus consists of only a few species, and one would think it straightforward to match Walter's description of *C. serotina* with the appropriate plant of the Carolinas.

But previous authors have not found the assignment of Walter's name to be so simple. Well into the 20th century *Collinsonia serotina* was merely listed as a name or more often wholly disregarded as perhaps one of the seven species of *Collinsonia* recognized by Elliott (1816). [Elliott considered Walter's plant to be *C. tuberosa* of Michaux (1803), neglecting the prior date of Walter's publication. His identification was incorrect, as will be shown.]

THE GENUS *COLLINSONIA*

In recent years the genus *Collinsonia* has twice been given significant study, by Shinners (1962) and by Peirson et al. (2006). Shinners considered the genus to consist of four species: *C. verticillata* Baldw. ex Ell., from Tennessee and North Carolina into Georgia; *C. canadensis* L., from Kentucky and Maryland south into panhandle Florida; *C. tuberosa* Michx., from Georgia and Tennessee south into Georgia and Louisiana; and *C. serotina* Walt., from North Carolina south to Florida and west to Louisiana. Peirson et al. also believed the genus to consist of four species, but aligned differently; they recognized *C. verticillata* Baldw. ex Ell., *C. canadensis* L. (incl. *C. tuberosa* Michx.), *C. punctata* Ell. (perhaps incl. *C. serotina* Walt.), and *C. anisata* Sims.

Of these species, *Collinsonia verticillata* is relatively distinct and is treated similarly by Shinners and Peirson et al. Though found in the Carolinas, it was not known by Walter and need not be considered further.

Collinsonia canadensis, as viewed by Shinners, is a rather uniform species with stout stems, large leaves, and small flowers. He distinguished it from *C. tuberosa*, with its slender stems and small leaves; the flowers also are small. [*Collinsonia serotina*/*C. punctata* is readily defined by its relatively large flowers.] Peirson et al., with opportunity to observe these plants both in the field and under cultivation (which Shinners had not), while acknowledging the differences reported by Shinners, found the two entities to form a continuum and were not willing to separate them taxonomically. But insofar as the determinations by Ahles (in Radford et al. 1968) of the differences between *C. canadensis* and *C. tuberosa* are accurate, the former is largely western in the Carolinas, while the latter is exclusively on the coastal plain (including a reported collection from Berkeley Co.). Thus, as far as these two taxa may be distinguished, the plant Walter knew near his home on the coastal plain and named *C. praecox* would have been what has more recently been termed *C. tuberosa*. Where it is desired to distinguish the two, Walter's name being prior (1788 vs. 1803), the small-leaved, small-flowered Carolina *Collinsonia* is correctly known as *C. praecox* Walter. The distribution and comparative morphology of these taxa, however, are yet to be confirmed and appear not to impact the stated purpose of the present study.

COLLINSONIA SEROTINA

With *Collinsonia verticillata* and *C. canadensis* (incl. *C. tuberosa*) resolved or deferred, Walter's *C. serotina* is less obscure. Shinners (1962), as noted, treated *C. serotina* as undivided; he included within it two other names that will show importance later: *C. punctata* Ell. and *C. anisata* Sims. Peirson et al. (2006), in contrast, employed *C. punctata* (or *C. serotina*) and *C. anisata* as distinct species. Both authors noted these taxa to be readily distinguished from *C. canadensis* by their appreciably larger flowers.

The treatment of *Collinsonia punctata*/*C. serotina* by Peirson et al. (2006) contains a confusing internal contradiction and a puzzling misstatement as to typification. In his master's thesis, Peirson was consistent as to nomenclature. But when it came time for publication and his advisors were added as co-authors, there perhaps were too many cooks stirring the pot. In the Abstract and throughout the prefatory discussion, one of the four recognized species was repeatedly termed "*Collinsonia serotina*." Yet in the following key and in the treatment of species, this fourth species became "*Collinsonia punctata*." Between, a paragraph was inserted in which the authors stated that "the name *C. serotina* is hereby rejected as an ambiguous name."

Peirson et al. (2006: 403) further explained the rejection of *Collinsonia serotina* Walt. by asserting that "The specimen in the Walter Herbarium at the British Museum is in poor condition and possesses no floral material; its identity could not be determined with certainty." No source for this claim was cited. Perhaps it was an expansion of Shinners (1963: 78), who stated that "According to Fernald and Schubert (1948), there is a specimen in the Walter Herbarium which is the same as *C. punctata* Elliott."

But Fernald & Schubert (1948) had made no such statement. Their 1948 paper was a well-illustrated report of the findings of Schubert in photographing British type collections. They did discuss *Collinsonia serotina* (p. 223), noting Walter's name to have priority over Elliott's *C. punctata*. But they referred to no specimen in the Walter Herbarium.

In fact, there is no specimen of *Collinsonia* in the Fraser/Walter folio herbarium of the Natural History Museum, London. The specimens in the folio are arranged alphabetically by the names assigned them by Fraser or Walter. On page 35 of the folio, where *Collinsonia* would be expected, spm. 35-E is labeled "*Clitoria*" in Fraser's hand (= *C. mariana* L.) and spm. 35-F is labeled "*Commelina*" in Walter's hand (= *C. erecta* L.). Nor is there an unnamed specimen elsewhere in the herbarium that has been identified as a species of *Collinsonia*.

These vagaries aside, Peirson et al. (2006) emphasized a little-understood detail of floral morphology within the genus *Collinsonia*: the presence in different populations of either two or four stamens per flower. As Shinners (1962) had noted, stamen number in the Labiatae has been used to separate genera and even whole tribes. Yet here, some plants have only two stamens, considered characteristic of typical *Collinsonia*, while others with four stamens have been segregated into the genus *Micheliella* (e.g., Small 1933, as *M. anisata* (Sims) Briq.). This distinction is now agreed to be valueless in separation of genera.

But Peirson et al. (2006) did find correlation of stamen number with quite another feature, that of odor. They reported plants with an anise-like scent reliably to have four stamens and to range from central Georgia to panhandle Florida and west across Alabama to southern Mississippi; plants with a lemon-like scent and two stamens were limited to southwestern Georgia and panhandle Florida to southern Mississippi. [Plants of *C. canadensis* were also found to have a lemon-like scent.] The ranges of these two variants overlapped appreciably, though with some areas exclusive (especially of the anise-scented form). Peirson et al. reported further correlation with a series of morphological variables, sufficient for them to justify separation of *C. punctata* from *C. anisata*.

Peirson's separation of the *C. punctata*/*C. anisata* complex at species level of two populations on the basis of differing scents and differing stamen numbers, even though reported to be correlated with other morphology, is not supported here. Abundant herbarium materials annotated by Peirson could not be reliably distinguished except by floral dissection (and stamen count); odor was not apparent in dried materials. Flower size (if present) was quite satisfactory as a determinant of the complex, with flowers appreciably larger than *C. canadensis*/*C. tuberosa*. There may be room to recognize the two taxa on basis of scent, perhaps at the level of variety or form. But neither flower size nor other morphology was of value in separating *C. punctata* from plants identified by Peirson as *C. anisata*.

Further damaging to the thesis that two species may be recognized within this complex is the fact that none of the names has a clear provenance. *Collinsonia serotina* was described by Walter (1788) without indication of origin. *Collinsonia anisata* was described and illustrated from a plant cultivated in England (Sims 1809), said to be "a native of South-Carolina." *Collinsonia punctata* was a plant apparently known in the field by Elliott (1816) and described in detail; yet its source is unknown and almost its only significant mark is that the flowers had four stamens. By Peirson's distribution maps, there is essentially no likelihood that any plant identifiable by any of these names could have been obtained in the Carolinas. [A single collection marked as *Collinsonia punctata* from Allendale Co., South Carolina, thus disjunct from others of this complex, appears to be *C. canadensis*, frequent in nearby counties.]

Even so, the probable source of Walter's *Collinsonia serotina* and Elliott's *C. punctata* (and perhaps Sims' *C. anisata*) can be deduced. Peirson et al. (2006) mapped a cluster of counties in north-central Georgia where his *Collinsonia anisata* (so annotated) has been collected. Independently, Jones and Coile (1988) mapped their *C. serotina* with the same distribution. Across

these counties was once the Lower Creek Trading Path, the ancient Indian trail from Augusta to the Mississippi River, followed by William Bartram in 1775 and John Fraser in 1787 (Ward 2014), and by Stephen Elliott in 1818 (and earlier?) (to purchase land vacated by the retreating Creeks; Huck 2007). It is a reasonable supposition that it was along this trail that Fraser collected the plant, which was then taken to Walter and named *C. serotina*. And Elliott, following the same path, may have found his *C. punctata*, a plant unknown in his home state. Perhaps even *C. anisata* has a common source, for Fraser is known to have brought to England seeds of many Carolina and Georgia species, for commercial distribution (Britten 1899). [Other species native to this area but absent from the Carolinas were also surely found here by Fraser and were described by Walter: *Delphinium carolinianum* Walt., *Silene catesbaei* Walt., etc. (Ward 2014).]

TYPIFICATION AND CONCLUSIONS

In the absence of authentic original materials, the International Code of Botanical Nomenclature (McNeill et al. 2006) permits selection of another specimen — a neotype — to represent the missing type. The specimen so selected as neotype for *Collinsonia serotina* Walter should be chosen in belief that it represents the population from which Walter's material may have come. An appropriate specimen is here selected, from a Georgia county traversed by the ancient Indian trail.

Collinsonia serotina Walter, Flora Caroliniana, 65. 1788. **NEOTYPE** (selected here): **USA. Georgia**. Meriwether Co.: Rocky soil, by beaver pond, Fairly common, Pine Mountain trail, 6 Sep 1982, *M.A. Garland 95* (GA; annot. *Collinsonia anisata* Sims, by Peirson in 2002).

Thus, by the analysis and neotype selection as given here, the genus *Collinsonia* (Labiatae) is considered to consist of only three species: *C. canadensis* L. (= *C. praecox* Walt., *C. tuberosa* Michx.); *C. serotina* Walt. (= *C. anisata* Sims, *C. punctata* Ell.); and *C. verticillata* Baldw. ex Ell. Recognition of infraspecific taxa within *C. canadensis* and *C. serotina* remains unresolved. In the belief, supported by the present evidence, that the mint named *Collinsonia serotina* by Thomas Walter (1788) is not distinguishable at the level of species from the plants later named *C. anisata* Sims and *C. punctata* Ell. — and secured by a typification that establishes its form as such — Walter's disregarded name regains its significance as a member of the Southeastern flora.

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